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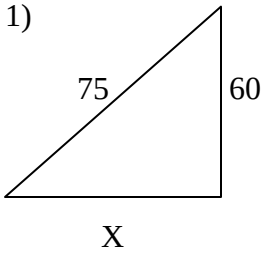
Part I:

Round to the nearest hundredth when necessary:

1)



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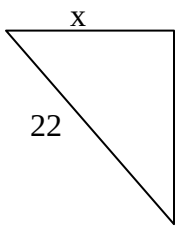
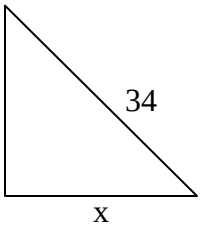
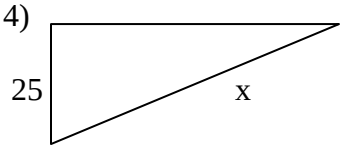


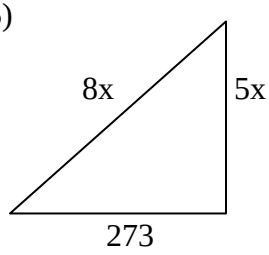
3)



4)



5)



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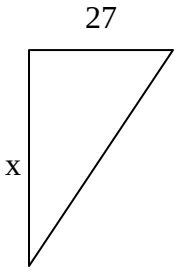

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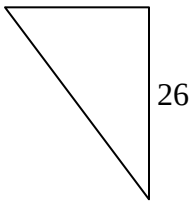
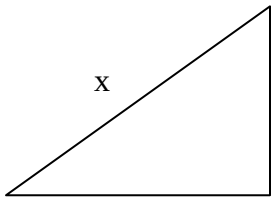
7)



8)



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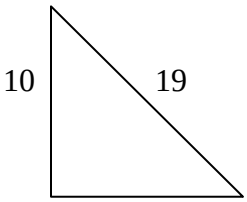

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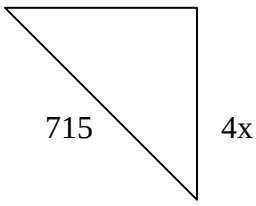
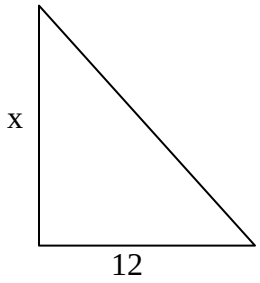


11)



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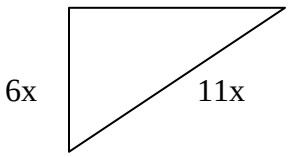

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13) A 40-foot statue of Cody casts a 55-foot shadow, what is the angle of depression?

14) The bus driver drove 9 miles south and then turned and drove 40 miles west. How far is the bus from where it first started?

15) Dora the Explorer is pelting SpongeBob with rocks from a 6^{th} story fire escape. If SpongeBob is 38 feet from the base of the building and the angle of elevation is 62°, what distance is the rock traveling?

16) A ladder is leaning against the wall of a building. The angle of depression is 71° and the base of the ladder is 11 feet from the base of the building. Find the length of the ladder.

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17) The perimeter of a square is 144 cm. Find the length of the square's diagonal.

18) A boy is sitting on the floor flying a kite. He has 410 feet of string. The angle of depression is 53°. How high is the kite?

19) sin 300° =

20) cos x = 0

21) tan x = undefined

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22) tan 330° =

23) cos 300° =

24) sin x = -1

25) cos 330° =

26) tan 180° =

27) sin x = -√3/2

28) sin 90° =

29) tan x = -√3

30) cos 270° =

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31) sin 150° =

32) cos x = -√3/2

33) tan 270º =

34) tan 225° =

35) cos x = - ½

36) sin x = -1

37) cos 135° =

38) tan 120° =

39) sin x = ½

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40) sin 225° = 41) tan x = -1 42) cos x = 1

Part II: Monomials/Polynomials

1) $(-4x^7y^{-5}z)^3$ 2) $\frac{(8x^{15}y^{12}z^6)^2}{(2x^5y^4z^2)^6}$ 3) $(9x^5y^{-9}z^4)^2\,(3x^{-3}y^4z^5)^4$

4) $5x(2x^2 - 4x + 8) - 4(5x^2 + 10x - 3)$ 5) $6x(4x^2 - 8x + 6) - 4(6x^2 + 12x - 9)$

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6) $\frac{(3a^5b^4c^8)^3}{(9a^9b^6c^{-12})^2}$

7) $\frac{72x^{11}y^{-3}z^8}{56x^{14}y^3z^9}$

8) $(2d^5e^{-11}f^{-6})(-11d^{-7}e^{13}f^5)$

9) $(6x - 11)(4x - 3)$

10) $(5x + 6)(12x - 1)$

11) $(4x - 9)(6x - 5)$

12) $(12x - 7)(8x + 5)$

13) $(10x - 3)^2$

14) $(9x + 2)^2$

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15) $(2x^2 - 5x + 8)(9x - 7)$

16) $(6x^2 + 7x - 5)(4x - 3)$

17) $(5x - 2)^3$

18) $(8x + 3)^3$

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Part III:

Factor each completely:

1) $x^2 - 6x - 72$

2) $x^2 + 50x + 49$

3) $12x^2 + 4x - 5$

4) $x^2 + 2x - 483$

5) $24x^2 - 14x - 5$

6) $x^2 - 121$

7) $24x^2 + 40x + 6$

8) $x^2 - x + 1{,}722$

9) $x^2 + 3x - 598$

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10) $x^2 - 17x + 60$

11) $x^2 + 22x - 48$

12) $48x^9y^3 – 120x^8y^2 – 24x^7y$

13) $x^2 - 22x + 96$

14) $36x^2 + 21x + 3$

15) $x^2 + 10x + 24$

16) $12x^{10} - 72x^9 + 24x^8$

17) $64x^5y^3 + 80x^3y^4 – 16x^2y^3$

18) $x^4 – 15x^3 + 56x^2$

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19) $4x^2 + 20x - 144$

20) $6x^3 - 18x^2 - 108x$

21) $12x^2 - 147$

22) $100x^2 - 100$

23) $x^2 - 27x + 140$

24) $24x^2 + 10x - 4$

25) $7x^2 + 28x - 420$

26) $60x^2 + 28x + 3$

27) $24x^2 + 10x - 1$

28) $4x^2 - 4x - 35$

29) $4x^4 - 16x^3 - 128x^2$

30) $72x^2 + 182x + 5$

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31) $7x^2 - 84x + 224$

32) $45x^2 + x - 2$

33) $12x^2 + 35x - 3$

34) $6x^{17} - 216x^{15}$

35) $20x^2 - 120x - 800$

36) $12x^2 + 24x - 420$

37) $12x^2 - 20x + 7$

38) $x^2 - 25x + 84$

39) $9x^2 - 169$

40) $4x^2 - 96x + 576$

41) $x^2 + 48x + 135$

42) $40x^2 + 2x - 3$

43) $15x^2 + 7x - 2$ 44) $10x^2 – 10x – 720$ 45) $x^2 + 4x – 165$

Part II Answer Key:

1) $\frac{-64x^{21}z^3}{y^{15}}$ 2) 1 3) $\frac{6{,}561z^{28}}{x^2y^2}$ 4) $10x^3 – 40x^2 + 12$ 5) $24x^3 – 72x^2 – 12x + 36$

6) $\frac{c^{48}}{3a^3}$ 7) $\frac{9}{7x^3y^6z}$ 8) $\frac{-22e^2}{d^2f}$ 9) $24x^2 – 62x + 33$ 10) $60x^2 + 67x – 6$ 11) $24x^2 – 74x + 45$

12) $96x^2 + 4x – 35$ 13) $100x^2 – 60x + 9$ 14) $81x^2 + 36x + 4$
15) $18x^3 – 59x^2 + 107x – 56$ 16) $24x^3 + 10x^2 – 41x + 15$
17) $125x^3 – 150x^2 + 60x – 8$ 18) $512x^3 + 576x^2 + 216x + 27$

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Part I

1	45	22	-√3/3
2	10.33	23	½
3	28.19	24	x ={270°}
4	63.98	25	-√3/2
5	37.95	26	0
6	48.71	27	x={240°,300°}
7	51.07°	28	1
8	37.08	29	x= {120°,300°}
9	31.76°	30	0
10	88.68	31	½
11	14.82	32	x = {150°,210°}
12	27.66	33	undefined
13	36.03°	34	1
14	41 miles	35	x = {120°,240°}
15	80.94 feet	36	x = {270°}
16	33.79 feet	37	-√2/2
17	16.97 cm	38	-√3
18	327.44 feet	39	x = {30°,150°}
19	-√3/2	40	-√2/2
20	x = {90°,270°}	41	x = {135°,315°}
21	x = {90°,270°}	42	x= {0°}

Part III

1	(x+6)(x-12)	24	2((3x+2)(4x-1)
2	(x+49)(x+1)	25	7(x+10)(x-6)
3	(6x+5)(2x-1)	26	(6x+1)(10x+3)
4	(x+23)(x-21)	27	(2x+1)(12x-1)
5	(4x+1)(6x-5)	28	(2x+5)(2x-7)
6	(x+11)(x-11)	29	4x^2(x+4)(x-8)
7	2(2x+3)(6x+1)	30	(2x+5)(36x+1)
8	(x+41)(x-42)	31	7(x+8)(x-4)
9	(x+26)(x-23)	32	(9x+2)(5x-1)
10	(x-12)(x-5)	33	(x+3)(12x-1)
11	(x+24)(x-2)	34	6x^15(x+6)(x-6)
12	$24x^7y(2x^2y^2–5xy–1)$	35	20(x+4)(x-10)
13	(x-16)(x-6)	36	12(x+7)(x-5)
14	7(3x+1)(4x+1)	37	(6x-7)(2x-1)
15	(x+6)(x+4)	38	(x-21)(x-4)
16	$12x^8(x-2)(x-1)$	39	(3x+13)(3x-13)
17	$16x^2y^3(4x^3 - 5xy – 1)$	40	4(x-12)(x-12)
18	x^2 (x-8)(x-7)	41	(x+45)(x+3)
19	4(x+9)(x-4)	42	(10x+3)(4x-1)
20	6x(x+3)(x-6)	43	(3x+2)(5x-1)
21	3(2x+7)(2x-7)	44	10(x+8)(x-9)
22	100(x+1)(x-1)	45	(x+15)(x-11)
23	(x-20)(x-7)		
